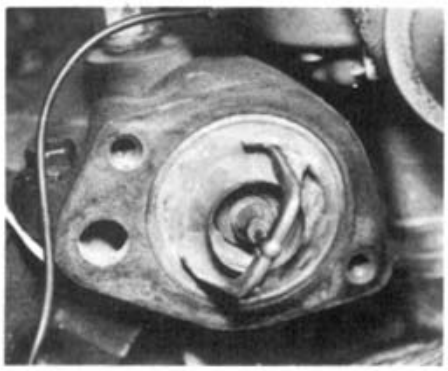


6.5 Location of thermostat

Fig.2.1 Correct location of thermostat (Sec. 6)

6 Thermostat – removal and installation

1 Partially drain the cooling system, as described in Section 2.
2 Slacken the top radiator hose to the thermostat housing and remove the hose.
3 Undo and remove the two bolts and spring washers that secure the thermostat housing to the intake manifold.
4 Carefully lift the thermostat housing away from the intake manifold. Recover the joint washer adhering to either the housing or intake manifold (photo).
5 Withdraw the thermostat, making a note of which way round it is fitted (photo).
6 Install the thermostat using the reverse procedure to removal.
7 Always ensure that the thermostat housing and intake manifold mating faces are clean and flat. If the thermostat housing is badly corroded install a new housing. Always use a new gasket. Tighten the two securing bolts to the specified torque.

7 Thermostat – testing

1 Remove the thermostat, as described in the previous Section.
2 Test the thermostat for correct functioning by suspending it on a string in a saucepan of cold water together with a thermometer. Heat the water and note the temperature at which the thermostat begins to open. This should be as given in the Specifications. Continue heating the water until the thermostat is fully open. Then let it cool down naturally.
3 If the thermostat does not fully open in boiling water, or does not close down as the water cools, then it must be discarded and a new one installed. Should the thermostat be stuck open when cold, this will usually be apparent when removing it from the housing.

8 Water pump – removal and installation

1 Drain the cooling system, as described in Section 2.
2 Remove the radiator and shroud, as described in Section 5.
3 Loosen the alternator adjusting bolts and remove the drivebelt. If an air-conditioning pump is installed the alternator and mounting bracket will have to be removed completely.
4 Remove the fan and pulley from the pump.
5 Unscrew and remove the bolts and washers that secure the water pump assembly. Note the location of the bolts as they are of different lengths.
6 Lift away the water pump assembly. Recover the gasket if not stuck to the casting. If necessary also remove the thermostat housing from the water pump.
7 Before installing the water pump assembly, remove all traces of the old gasket and sealing compound from the front cover and water pump assembly.
8 Carefully apply a sealer to both sides of a new gasket and accurately position on the water pump.
9 Hold the water pump in position and screw in two bolts and washers, so retaining it to the front cover.
10 Remove all gasket material from the thermostat housing mating faces. Apply a sealer to both sides of the new gasket and position it on the water pump. Secure in position with the two bolts and washers.
11 Install all remaining securing bolts and washers ensuring they are located in their original positions. Tighten in a diagonal and progressive manner to the correct torque wrench settings (see Specifications).
12 Install the fan, drivebelt(s) and radiator; then refill the cooling system.

9 Water pump – overhaul

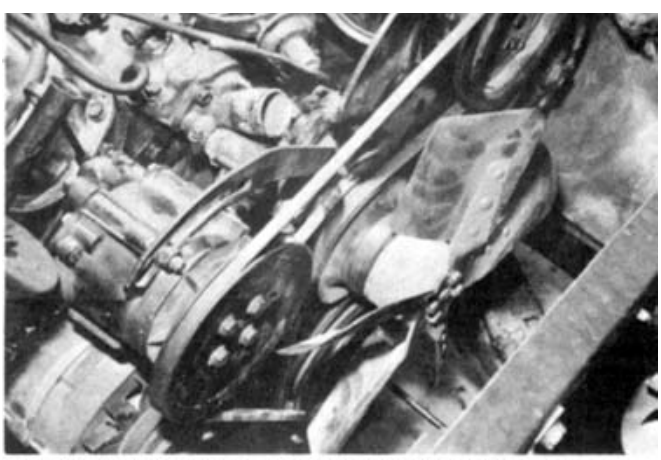
Water pump failure will be indicated by coolant leakage, noisy operation and/or excess movement of the drive spindle. If any of these faults are present a replacement pump must be obtained from a dealer as it is not practical or even economical to attempt repairing a worn-out unit.

10 Viscous cooling fan – removal and installation

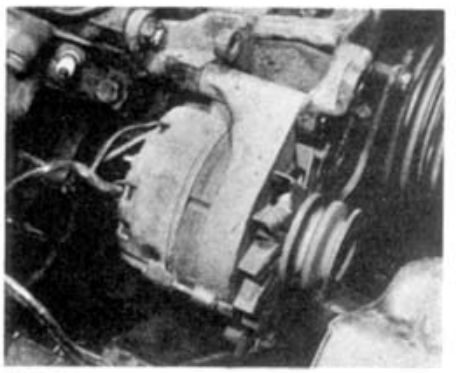
1 Remove the radiator, as described in Section 5.
2 Slacken the fan belt and remove the bolts securing the fan drive clutch to the water pump hub.
3 Remove the fan drive clutch and fan as a complete assembly.
4 Remove the retaining bolts and separate the drive clutch from the fan.
5 The viscous clutch assembly is not repairable and if faulty should be replaced with a new clutch unit.
6 Install the fan and clutch using the reverse of the removal procedure.

11 Drivebelts – inspection and adjusting

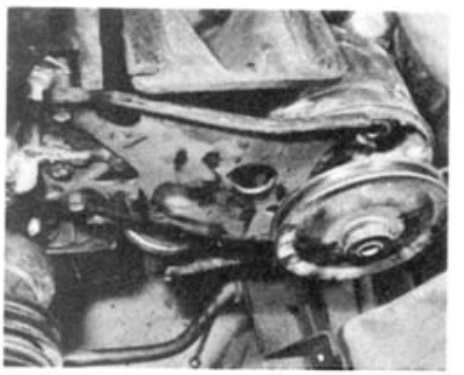
1 The number of drivebelts on the car will depend on which extras



11.1 Layout of engine driven accessories and drivebelts – typical



11.3 Alternator top pivot mounting



11.4 Earlier type power steering pump mounting bracket

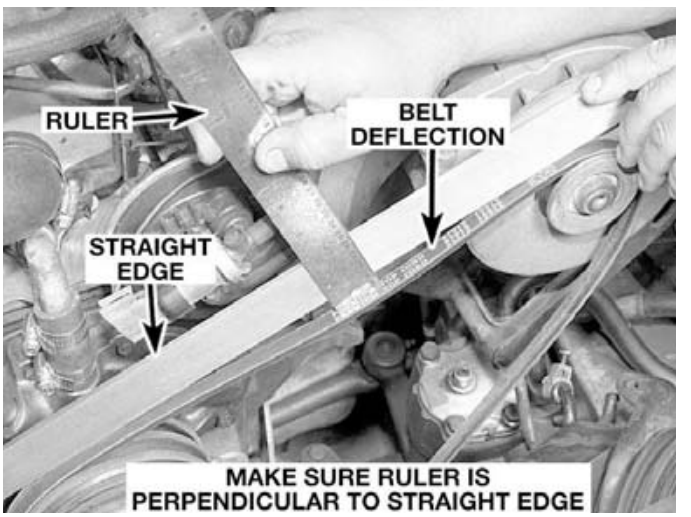


Fig. 2.2 Measuring drivebelt deflection with a straightedge and ruler

are installed, ie air-conditioning compressor, power steering pump and thermactor pump (photo).

2 Periodically the belts should be checked for correct tension and wear. Use a flashlight and examine the inside surface of the belts for cracks and if in evidence renew the belt(s).

3 The alternator belt tension is adjusted by slackening the two lower pivot bolts and top slide bolt, and moving the alternator in the required direction (photo).

4 Power steering and thermactor pump drivebelts are adjusted by slackening the slot bolts and screwing the adjusting bolts in or out to achieve the required belt tension. The slot bolts are then tightened

Note: *On some earlier models the power steering and thermactor pump drivebelts are adjusted by slackening the mounting bolts on the pump bracket and carefully levering the pump away from the engine (see photo).*

5 When an air-conditioning pump is installed the drivebelt tension is controlled by an idler pulley; this has a single pivot bolt and an adjusting bolt located behind the pulley.

6 To get the belts adjusted correctly the car should be taken to a dealer who will have a special belt tensioning tool. However the home mechanic can obtain approximately the correct tension by adjusting the belt(s) until there is about $\frac{1}{2}$ in (13 mm) of movement midway between the pulleys (see Fig. 2.2).

12 Drivebelts – removal and installation

1 To remove a drivebelt, slacken the relevant accessory pivot and adjusting bolts and move it in towards the engine as far as possible. Remove the belt by lifting it over the pulley, rotating the pulley at the same time. **Note**: *If air conditioning and/or power steering pumps are installed* these drivebelts will have to be removed prior to the removal of the alternator/fan belt.

2 Install the drivebelt(s) using the reverse sequence to removal. If a new belt is installed the engine should be run for 10 minutes then switched off and the belt tension re-checked.

3 On some engines the fan is driven by twin belts and these should always be renewed as a pair.

13 Temperature gauge – fault diagnosis

1 If the temperature gauge fails to work, either the gauge, the sender unit, the wiring or the connections are at fault.

2 It is not possible to repair the gauge or the sender unit and they must be replaced by new units if at fault.

3 First check that the wiring connections are sound. Check the wiring for breaks using an ohmmeter. The sender unit and gauge should be tested by substitution.